

REMARKS

The Examiner's action dated June 16, 2003, has been received, and its contents carefully noted.

In response to the claim rejection presented in section 2 of the action, claim 30 has been amended to be properly dependant from a preceding claim. It is therefore requested that this rejection be reconsidered and withdrawn.

The double patenting rejection presented in section 3 of the action has been noted. Since the pending claims have also been rejected on the basis of prior art, it is asked that the double patenting rejection be held in abeyance until the prior art rejections have been withdrawn.

The pending claims have been amended to more clearly define the contribution of the invention over the prior art, a number of the claims have been cancelled, and new claims 50-55 have been added to further define the contributions of the present invention. All of the added claims depend from existing claims.

The rejection presented in section 6 of the action, which applies to the two independent claims now in the application, claims 20 and 47, is traversed for the reason that the method defined claim 20 and the tool defined in claim

47 are not disclosed in or suggested by the applied references.

The present invention is directed essentially to a method and tool for performing an optical inspection in order to determine the existence of residues of a metal-containing layer on the surface of an article.

According to the invention, as defined in these claims, spectral measurements are carried out on at least one predetermined site on the article to detect residues of a non-removed metal-containing layer that must be removed during the process.

In clear contrast, Roth discloses a procedure in which the end point of a planarization process is determined by analyzing the presence of removed material in the slurry containing material that has been carried off from the surface being polished. In other words, end point detection is based on inspection of material that has been removed from the layer being planarized. According to the present invention, as claimed, inspection is performed at a predetermined site on the article itself, so that the detection is performed with respect to material that still resides on that surface.

Thus, the method and tool according to the present invention clearly differ from the disclosure of Roth.

As regards the secondary reference, Chuang, this discloses inspections applied to a processed sample utilizing techniques different from those of the present invention, at least in that the secondary reference also does not disclose the selection of predetermined sites for inspection.

It should be clear from the discussion presented above that there is no basis in fact for a conclusion that it would be somehow obvious to modify the method of Roth in accordance with the teachings of Chuang. Indeed, such a modification would be directly contrary to the teachings of Roth and would result in a fundamentally different process.

Moreover, even if there were some way to incorporate teachings of the secondary reference into the method of the primary reference, the resulting modified method would still not involve selection of a predetermined site on the article being processed.

It is therefore submitted that claim 20 distinguishes over an reasonable combination of the teachings of the applied references, at least by the step of "selecting at least one predetermined site on the article to apply local spectral measurements to said at least one predetermined site to thereby control the quality of the CMP process applied to said at least one predetermined site." Similarly, claim 47

distinguishes over any reasonable combination of the applied references by its recitation of a tool that includes and optical monitoring system operable "to apply optical inspection to at least one predetermined site on the wafer for determining the existence of residues of a metal-containing layer on the wafer resulting from the CMP process."

As regards the rejection presented in section 7 of the action, all of the rejected claims depend from respective ones of claims 20 and 47, and it is therefore submitted that those claims should be considered allowable along with the independent claims from which they depend.

In view of the foregoing, it is requested that the formal rejection and the prior art rejections be reconsidered and withdrawn and that the claims be found allowable pending resolution of the double patenting rejection.

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If the above amendment should now place the application in condition for allowance, the Examiner is invited to call undersigned counsel to resolve any remaining issues.

Respectfully submitted,

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